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THE CONTRIBUTION OF NEW MINES TO INCREASED SOVIET SHALE PRODUCTION

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Shale is acquiring increasing importance each year in the Soviet economy. It is being used as a local solid fuel in plants, electric power plants, and locomotives. Moreover, it is converted to gas and serves as the raw material basis for shale oil which, to a considerable extent, is used as a substitute for petroleum.

Since the end of World War II, the shale mines in Leningrad Oblast and Estonian SSR have been restored and new ones have been put into operation. In Estonia two new mines, No 6 and No 10, were put into operation in 1948; one, No 2, began functioning in 1949; and another new shale mine will begin operations in the fourth quarter of 1950. In Leningrad Oblast, one new shale mine, No 1, was put into operation in 1947; and a second one, No 2, in 1948. New shale mines are also being constructed in Kuybyshev and Saratov oblasts and three have already been put into operation.

At the end of 1948, the Kokhtla-Yarve Shale-Gas Plant started supplying gas to Leningrad. This city will receive 25 times as much gas as before the war and it is planned to provide all living quarters with gas facilities. Gas will replace 3 million cubic meters of firewood and 250,000 tons of liquid fuel each year.

The large shale mines are provided with 10-ton electric locomotives, heavy KMP-1 cutting machines, STR-30 and RTU-30 conveyers, S-153 and UMP-1 loading machines. Metal props are used at the mine faces. Mechanization of the various phases of shale mining has considerably increased the shale output. The "Kyava" and "Kukruse" mines, which produced 800-1,200 tons of shale per 24 hours under capitalist Estonia, have raised their output to 22 times that amount since their restoration and the introduction of machinery.

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Almost all the shale seams being worked in the USSR consist of from two to four layers of shale and one to four layers of rock. The thickness of the rock layers amounts to 33-47 percent of the thickness of the shale seams. Such complicated structure of the seams makes it impossible to eliminate manual labor at the mine faces with the aid of coal combines and other machines designed for removing the coal and loading it onto the conveyer as well as for backfilling the worked-out area. Blasting the seam brings down waste rock as well as shale and sorting by hand has to be done right at the mine face. Later, cleaning the shale must be finished at the mine surface. This is particularly necessary for mines working the Kashpirskiy seam, the Savel'yevskiy seam No 2, and the Ozinskiy seam No 6.

In the Volga shale mines where the seam contains soft rock layers, a different procedure has been followed. A multibar machine simultaneously cuts the rock layers through their entire thickness and reduces them to small pieces up to 80 millimeters in size. The pieces of rock are sent directly from the cutting unit to the mine face conveyer, from which they are hurled, with the aid of a machine, into the worked-out area at the rate of 1-12 meters per second.

In Estonian and Leningrad shale deposits containing firm layers of limestone (3-4 layers), S-153 type loading machines will be used to convert extraction and loading onto conveyer at the mine face to total mechanization. Cleaning of shale will be carried out at the factory.

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